

What is claimed is:

1. A method of therapeutic genetic immunization, comprising administering an antiretroviral drug therapy until viral replication is effectively suppressed, and then administering a gene delivery complex comprising
5 foreign genetic material and a non-viral vector,
wherein the complex has a specific affinity for a receptor on an antigen presenting cell.

2. The method of Claim 1, wherein the foreign genetic material is selected from the group consisting of RNA and DNA.

3. The method of Claim 1, wherein the foreign genetic material encodes at least one
10 antigen from a reverse-transcriptase dependent virus or a mutant reverse-transcriptase dependent virus.

4. The method of Claim 3, wherein the foreign genetic material is DNA encoding at least a substantial portion of a replication-defective human immunodeficiency virus.

5. The method of Claim 3 or 4, wherein the foreign genetic material is DNA encoding
15 at least a substantial portion of an integration-defective human immunodeficiency virus.

6. The method of Claim 5, wherein the foreign genetic material is DNA encoding at least a substantial portion of an integrase negative mutant of a dual-tropic primary isolate of a human immunodeficiency virus.

7. The method of Claim 6, wherein the DNA further includes one or more stop
20 codons in one or more of the reading frames of the integrase gene.

8. The method of Claim 1, wherein the complex is DNA and one or more agents selected from the group consisting of sugars, polyethylenimine, polyethylenimine derivatives, and mixtures thereof.

9. The method of Claim 8, wherein the agent is sugar-modified polyethylenimine.

25 10. The method of Claim 8, wherein the agent is glucose.

11. The method of Claim 8, wherein the complex has a specific affinity for the mannose receptor.

12. The method of Claim 1, wherein the antigen presenting cell is a Langerhans cell.

13. The method of Claim 1, wherein the antigen presenting cell is a dendritic cell.

30 14. The method of Claim 13, wherein the receptor is a mannose receptor.

15. The method of Claim 1, wherein the antiretroviral drug therapy comprises an effective amount of hydroxyurea and a reverse transcriptase inhibitor.

16. The method of Claim 15, wherein the reverse transcriptase inhibitor is selected from ddI, d4T, 3TC, AZT, delavirdine, abacavir, adefovir, nevirapine, efavirenz, lubocavir ,
5 PMPA PMEA, and mixtures thereof.

17. The method of Claim 1, wherein the antiretroviral drug combination comprises a highly active retroviral drug therapy.

18. The method of Claim 17, wherein the drug combination is one or more reverse transcriptase inhibitors, and one or more protease inhibitors.

10 19. The method of Claim 18, wherein the reverse transcriptase inhibitor is selected from ddI, d4T, 3TC, AZT, delavirdine, abacavir, adefovir, nevirapine, efavirenz, lubocavir , PMPA PMEA, and mixtures thereof.

20. The method of Claim 18, wherein the protease inhibitor is selected from indinavir, saquinavir, ritonavir, nelfinavir, GW141, and mixtures thereof.

15 21. The method of any one of Claims 17-20, wherein the highly active antiretroviral drug therapy further comprises hydroxyurea.